

REMARKS

Reconsideration and allowance of the subject application are respectfully solicited.

Claims 12 and 14 through 25 are pending, with Claim 12 being independent. Claims 23 through 25 have been added. The Examiner's attention is directed, e.g., to p. 24, lines 6-10; p. 32, line 1 through p. 34, line 1; and p. 47, line 26 through p. 48, line 3, among other places; of course, the claims are not limited to the disclosed embodiments.

Claims 12, 14 through 16, and 20 through 22 were rejected under 35 U.S.C. § 103 over US 2003/0070581 A1 (Tomioka, et al.) in view of newly-cited U.S. Patent No. 5,626,654 (Breton). Claims 17 and 18 were rejected under 35 U.S.C. § 103 over Tomioka, et al. and Breton in view of EP 1243624 A1 (Nakazawa, et al.). Claim 19 was rejected under 35 U.S.C. § 103 over Tomioka, et al., Breton, and US 6,511,534 B1 (Mishina, et al.). All rejections are respectfully traversed.

Claim 12 recites, *inter alia*, that each of the liquid compositions comprises an amphiphilic block copolymer, with pH and pKa values as claimed, with the organic acid of the copolymer of the second liquid composition being a *sulfonic acid*, and with an increase in viscosity of the first liquid composition being caused by a decrease in pH of the first liquid composition on contact with the second (see conditions (i)-(iv) therein).

(By way of explanation and not of limitation, Applicants submit that in the applying method of the present invention, the mechanisms of micelles of the first and second liquid compositions being dispersed satisfactorily before contacting them with each other and the viscosity of the first liquid composition increasing after the contact is explained below. In particular, Applicants submit that before the contact, the micelle composed of the block copolymer of the first liquid composition has an organic acid or a salt of the organic acid as a

hydrophilic group and is dissociated ionically, whereby the micelles are ionically repulsed by each other to prevent the interaction between the micelles; as a result, the viscosity is low and the micelles are dispersed sufficiently. On the other hand, Applicants submit, the organic acid of the block copolymer of the second liquid composition which is smaller than the first one in pH is a *sulfonic acid*, and, has the smaller pKa than that of the first one so that the second one is sufficiently dissociated ionically and has a low viscosity to disperse sufficiently. Applicants submit that, in particular, since the polymer is a block copolymer having a sulfonic acid group, the micelles comprised of the block copolymer are ionically repulsed by each other to prevent the interaction and make the sufficient dispersion. Applicants submit that when contacting the first liquid composition with the second one, pH of the first liquid composition shifts to the acidic end because the second liquid composition has a lower value of pH and has a sulfonic group. As a result, Applicants submit, the hydrophilic group in the first liquid composition is neutralized to prevent the repulsion between the micelles consisting of the block copolymer, but the interaction therebetween is enforced to act between the micelles strongly, whereby the viscosity of the first liquid composition increases (see, e.g., p. 21, line 10 through p. 24, line 10, and working examples). Applicants submit that the method for applying the liquid of the present invention thus has an advantageous effect of dispersing sufficiently the micelles of the first and second liquid compositions before the contact and increasing the viscosity of the first liquid composition after the contact because of the synergism of the relations of pH and pKa of the first and second liquid compositions and the existence of the sulfonic acid group in the second one, as explained above.)

However, Applicants respectfully submit that none of Tomioaka, et al., Breton, Nakazawa, et al., and Mishina, et al., even in the proposed combinations, assuming, *arguendo*,

that such could be combined, discloses or suggests at least the above-discussed combination of claimed features as recited, *inter alia*, in Claim 12.

Applicants respectfully submit that Tomioka, et al. does not describe or suggest that its liquid compositions have amphiphilic block copolymers as claimed; accordingly, as a matter of course, Tomioka, et al. is completely silent as regards the above-discussed claimed features that require, *inter alia*, that the amphiphilic block copolymer has an sulfonic acid as the organic acid. The Official Action (1) cites to Tomioka, et al.'s [0139] as showing sulfonic acid, and (2) cites to Tomioka, et al.'s [0106] and [0154] as showing contacting a cationic liquid composition and an anionic liquid composition. Applicants respectfully traverse both points (1) and (2). As regards point (1), Applicants submit that Tomioka, et al.'s sulfonic acid is used as a mere acid for adjusting pH of the liquid composition (see [0138]), *which is completely different from sulfonic acid being the organic acid of the block copolymer as claimed.* As regards point (2), Applicants submit that Tomioka, et al. does not describe or suggest contacting the [0106] cationic liquid composition and [0154] anionic liquid composition as claimed.

The Official Action relies upon Breton which it asserts shows an amphiphilic block copolymer and organic acid, but Applicants respectfully submit that it fails to remedy Tomioka, et al.'s deficiencies, and even if it could be combined therewith, *arguendo*, the combination would be deficient.

The Official Action relies upon Nakazawa, et al. as showing dicarboxylic acid, but Applicants submit that whereas the claim requires an organic acid *of the polymer of the first liquid composition*, Nakazawa, et al. in contrast merely discloses, e.g., a dicarboxylic acid functioning as a cross-linking agent which is not comprised in the polymer; accordingly, Applicants respectfully traverse the Official Action's reliance upon Nakazawa, et al.

Applicants also submit that there has been no showing of any indication of motivation in the cited document that would lead one having ordinary skill in the art to arrive at the above-discussed claimed features recited in Claim 12.

The dependent claims are also submitted to be patentable because they set forth additional aspects of the present invention and are dependent from independent claims discussed above. Therefore, separate and individual consideration of each dependent claim is respectfully requested.

Applicants submit that this application is in condition for allowance, and a Notice of Allowance is respectfully requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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